Kenizzle / **dsc-phase-2-project-v3**

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Group 12 Phase 2 Project

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Public repository · Forked from learn-co-curriculum/dsc-phase-2-project-v3

1 Branch **0** Tags Go to file t Go to file Add file Code

This branch is 18 commits ahead of `learn-co-curriculum/dsc-phase-2-project-v3:main` .

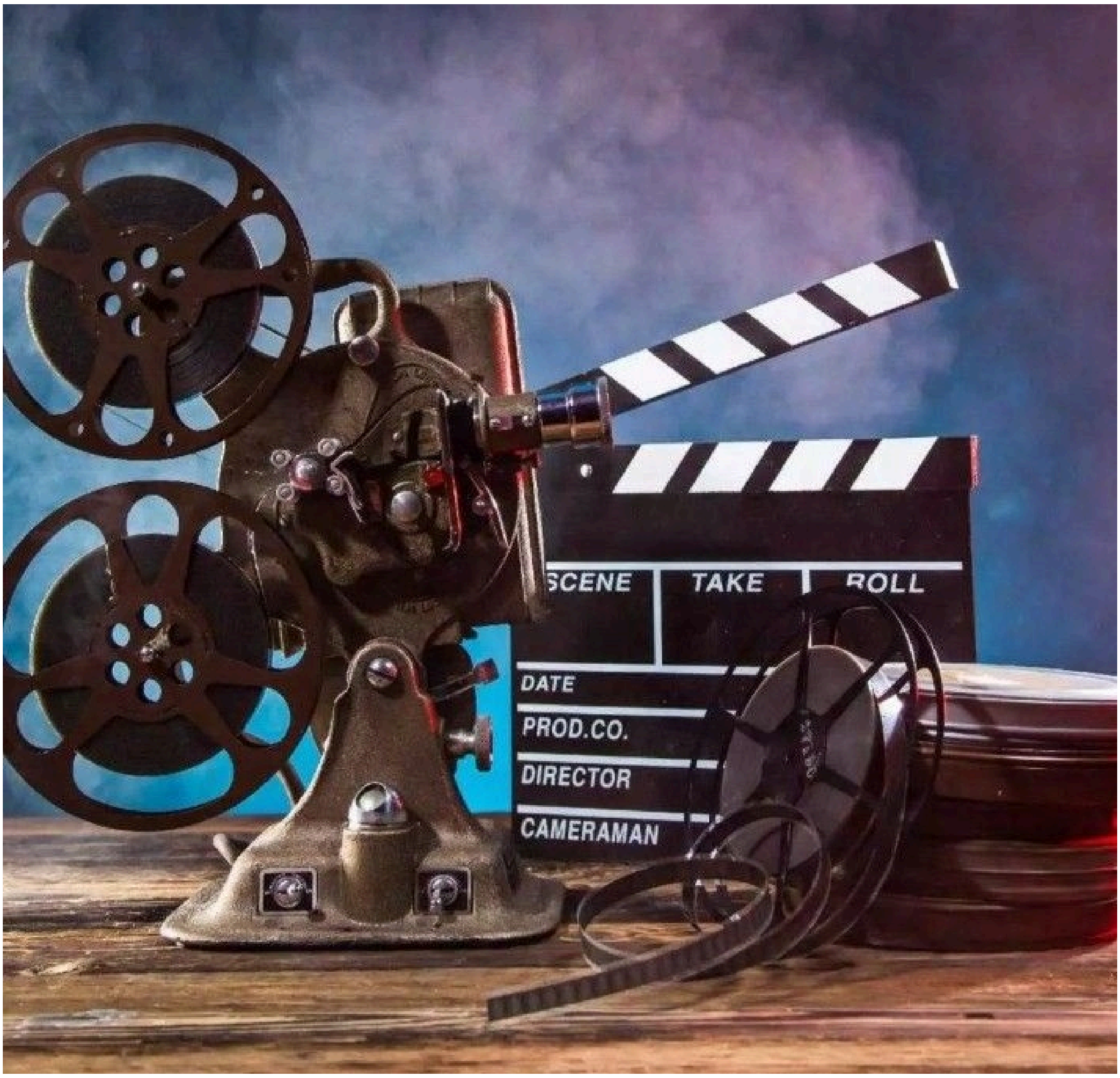
Contribute Sync fork

antony-wala Removed Outdated file 1bdf335 · 3 hours ago

.ipynb_checkpoints	jupyter notebook done	5 days ago
images	image added	yesterday
zippedData	add files and readme	2 years ago
.gitignore	jupyter notebook done	5 days ago
CONTRIBUTING.md	add files and readme	2 years ago
LICENSE.md	add files and readme	2 years ago
Phase 2 project- Group 6.p...	Add files via upload	yesterday
README.md	Update README.md	4 hours ago
Student.ipynb	cleaning up notebook	yesterday
Student_pdf.pdf	Add files via upload	yesterday
index.ipynb	Created an index file for the read...	2 years ago
movie_data_erd.jpeg	add files and readme	2 years ago

README Contributing License

🎬 IMDb Movie Analysis (2010–2023)



Unlocking insights from **13 years of IMDb data** to understand trends in genres, ratings, runtimes, and box office performance.

📌 Overview

Movies shape culture, drive billions in revenue, and influence streaming platforms worldwide.
This project analyzes **IMDb movie data (2010–2023)** to answer key business questions:

- What genres consistently perform well in terms of ratings?
- How do runtimes affect audience engagement?
- What trends exist in ratings and votes across the years?
- Which strategies can filmmakers and streaming platforms adopt to stay competitive?

The project is designed for **data enthusiasts, production studios, and streaming platforms** to gain **actionable insights** from movie data.

🗂️ Repository Structure

dsc-phase-2-project-v3/ |── Student.ipynb # Main analysis notebook
|── index.ipynb # Supporting exploration notebook
|── images/ # Saved plots & charts (PNG format)
| ├── top_genres_rating.png
| ├── runtime_distribution.png
| ├── gross_trend_enhanced.png
| └── ...
|── zippedData/ # Dataset folder (IMDb movie data)
|── README.md # Project documentation
|── LICENSE.md # License information
|── CONTRIBUTING.md # Contribution guidelines

💼 Business Understanding

The film industry is undergoing a **major shift**:

- 🎬 The rise of **streaming platforms** has led to shorter runtimes.
- 👥 Audience preferences now vary between **blockbuster franchises** and **critically acclaimed indie films**.
- 🎯 Studios need **data-driven decision-making** to reduce risks when greenlighting projects.

This project helps stakeholders answer:

- ✅ *What genres bring both critical and commercial success?*
- ✅ *What runtime length maximizes engagement?*
- ✅ *Are there trends in audience voting behavior post-2020?*

📊 Data Understanding & Analysis

The dataset spans **2010–2023** and was obtained from IMDb (stored in the `zippedData/` folder).

Key Columns

- `movie_id` → Unique identifier
- `primary_title` → Movie title
- `start_year` → Release year
- `runtime_minutes` → Duration of the movie
- `genres` → Assigned genres (Drama, Comedy, etc.)
- `averagerating` → IMDb average rating
- `numvotes` → Number of audience votes

🔧 Cleaning & Transformation

- Removed **missing and inconsistent runtimes**.
- Split multi-genre films to allow analysis by **individual genres**.
- Created new temporal features: `year_minus_1` and `year_plus_1` .

📈 Analytical Approach

1. **Genre Analysis** → Grouped by genre and computed average ratings.
2. **Runtime Distribution** → Identified the **bell-curve shape** (most movies fall between 100–120 minutes).
3. **Yearly Trends** → Tracked whether ratings improved or declined over time.
4. **Audience Engagement** → Analyzed number of votes **before and after the streaming boom**.

🎞️ Dataset

- **Source:** Extracted from IMDb and curated datasets.
- **Timeframe: 2010–2023**, covering 14 years of global cinema.
- **Scope:** Thousands of movies across diverse genres and runtimes.

📊 Key Columns Explained

- `movie_id` → Unique identifier for each film.

- `primary_title` → Title of the movie.
- `start_year` → Release year (2010–2023).
- `runtime_minutes` → Duration of the film.
- `genres` → Genre(s) of the film (Drama, Action, Comedy, etc.).
- `averagerating` → Average IMDb rating (1–10 scale).
- `numvotes` → Number of votes (audience engagement measure).
- `year_minus_1` & `year_plus_1` → Useful for analyzing trends before and after release.

🔎 **Why this dataset matters**:
It provides both **audience-driven metrics** (ratings & votes) and **industry-level traits** (runtime & genres). Together, they let us explore **what audiences love, how trends shift, and where filmmakers should focus their energy**.

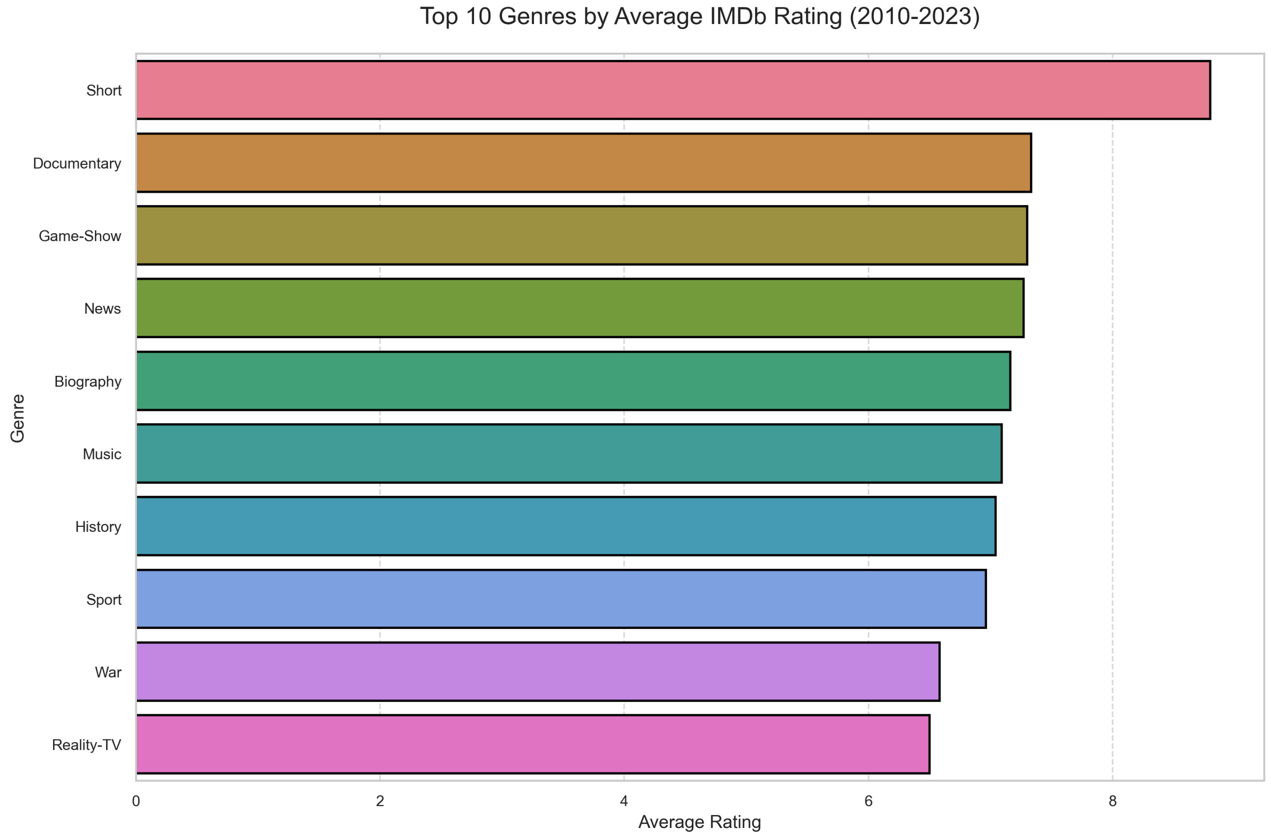
🔑 Key Insights

1. **Genres:**
   - *Drama* dominates in number of releases, but *Documentary* and *Mystery* consistently achieve higher ratings.
   - *Action* and *Adventure* drive massive audience votes, proving strong global appeal.
2. **Runtime:**
   - Most films fall between **90–120 minutes**, forming a bell curve distribution.
   - Long epics (>180 minutes) are rare but tend to score higher ratings.
   - Very short films (<60 min) appeal only to niche groups.
3. **Ratings:**
   - Ratings are **normally distributed** around ~6.8.
   - Audience expectations remain steady across the decade.
4. **Votes & Engagement:**
   - Blockbuster genres get **millions of votes**, while indie genres score fewer but higher-quality votes.
5. **Trends Over Time:**
   - Post-2015: franchises & sequels dominate.
   - 2020 onwards: shorter runtimes, fewer votes → the streaming era impact.

📊 Visualizations

All visualizations are saved in the `images/` **folder**. Below we detail **each chart, why it was chosen, and what it reveals.**

🎭 Top 10 Genres by Average Rating



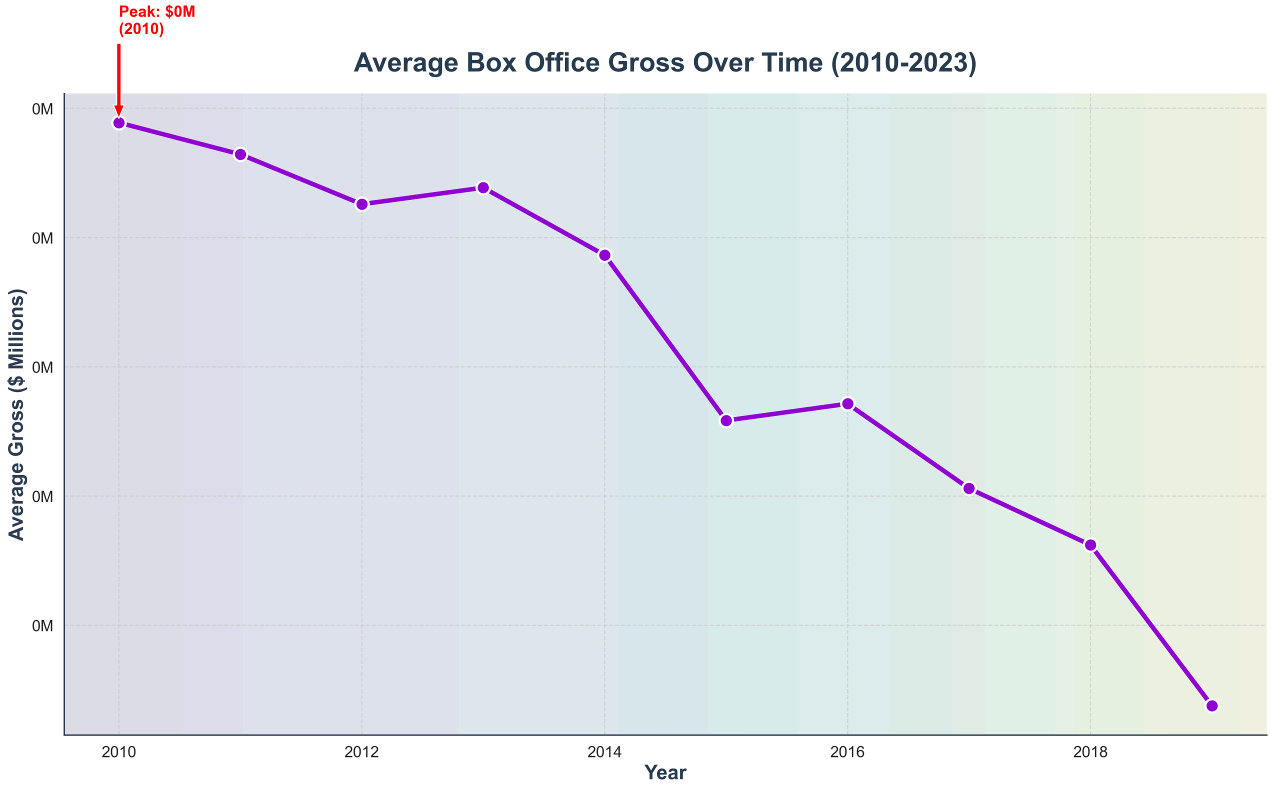
- **What it shows:** The average IMDb ratings (1–10 scale) for the top 10 genres between 2010–2023.
- **Why this chart:** A **bar chart** clearly compares categorical data (genres). Using horizontal bars ensures longer genre names are readable.
- **Insights:**
  - *Documentary* films often lead in ratings despite fewer releases.
  - *Drama* remains strong but shows mixed audience reception due to high volume.
  - *Comedy* and *Action* lag slightly in ratings but dominate mainstream appeal.

⭐ Ratings Distribution

![Alt text](images/distribution by runtime(minute).png)

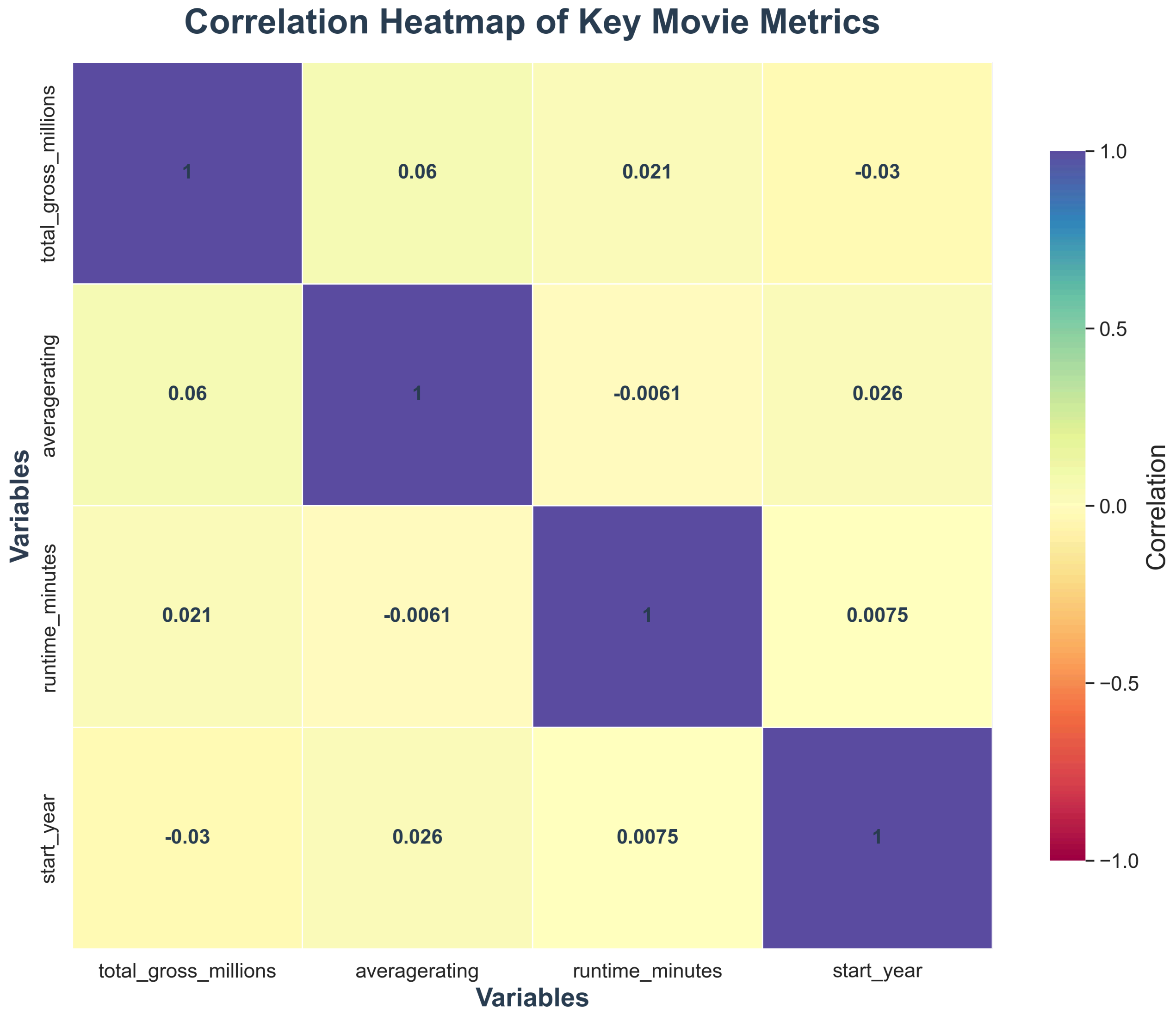
- **What it shows:** Histogram of IMDb ratings across all films.
- **Why this chart:** Ratings are continuous and audience-driven — a histogram reveals whether movies tend to score high or low.
- **Insights:**
  - Ratings form a near-normal distribution centered at **6.8**.
  - Very few films are rated below 4 or above 9 → audiences cluster around the middle.
  - This indicates **consistent audience standards** across years.

📈 Ratings Trend Over Time (2010–2023)



- **What it shows:** Yearly average IMDb rating.
- **Why this chart:** A **line chart** captures temporal changes and long-term trends.
- **Insights:**
  - Ratings are stable, hovering between **6.5–7.0**.
  - Peaks appear in standout years due to major blockbusters or award-winning films.
  - No dramatic decline despite the rise of streaming, meaning quality perception remains stable.

🎥 Votes Distribution by Genre



- **What it shows:** Average number of audience votes for each genre.
- **Why this chart:** A **bar chart** highlights the difference in engagement between genres.
- **Insights:**
  - *Action, Adventure, Sci-Fi* films attract the most votes — mass-market favorites.
  - *Documentary* and *Biography* earn fewer votes but higher **rating-per-vote**, showing **quality over quantity**.
  - Studios should balance between **audience reach** (votes) and **critical acclaim** (ratings).

🛠️ Technologies Used

- **Python** 🐍
- **Pandas** – Data cleaning & manipulation
- **NumPy** – Numerical computations
- **Matplotlib** – Static visualizations
- **Seaborn** – Stylish, statistical plots
- **Jupyter Notebook** – Interactive workflow

🎯 Recommendations

Releases

No releases published

Create a new release

Packages

No packages published

Publish your first package

Languages

● **Jupyter Notebook** 100.0%